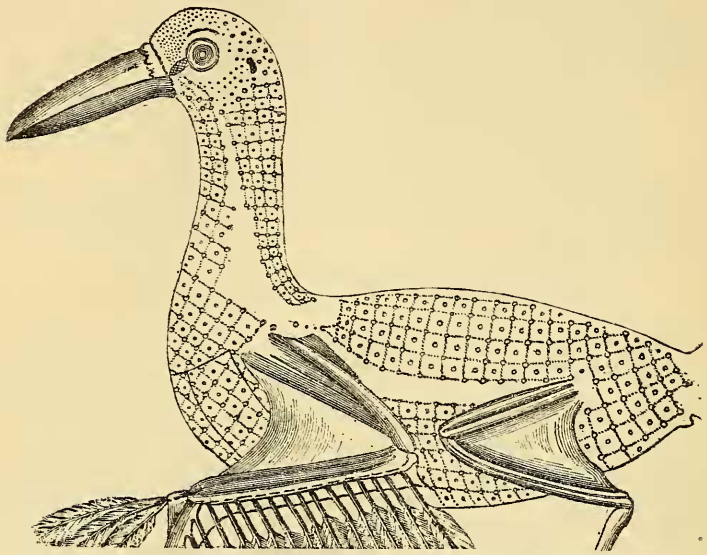
that the passage alluded to shows that Sir Thomas Browne was fully aware of the distribution of the feathers in well-defined regions, and that these differed in position and extent in different birds. Moreover, I believe the passage in the 'Amœnitates' shows that Linnæus knew of Browne's work. Besides the reference to the quincunx already quoted, there is yet another—"Pennæ quæ

Text-fig. 49.



Topographical diagram showing feather-tracts and bare spaces in schematic bird.
(Reduced from 'Amœnitates Academicæ,' vii. tab. i. fig. A.)

(præter alas et caudam) reliquum corpus servant, in *quincuncem* digestæ sunt"; and his phrase "mirando nunquam satis artificio, quod in Colymbi præsertim corio, alutariorum arte præparato . . . est conspicuum," is strangely reminiscent of the note of the famous Norfolk naturalist: "Elegantly conspicuous on the inside of the stripped skins of the dive-fowl."

2. On some Mammals collected by Capt. H. N. Dunn, R.A.M.C., in the Soudan. By Oldfield Thomas, F.R.S.

[Received March 11, 1903.]

The National Museum owes to Capt. H. N. Dunn a collection of Mammals, mostly small, made by him in the Egyptian Soudan in the course of 1902. Among these no less than five prove to need new names, thus showing how much still remains to be done

in studying the mammals of this interesting region; and it is hoped that other officers will follow Capt. Dunn's example.

The localities at which collections were made are mostly rather to the southward of Khartoum, the majority of them being in Kordofan, a province hitherto almost entirely unrepresented in our collections.

Besides the earlier writings of Sundevall [1] and Heuglin [2] on the Mammals of this region, reference may be made to a paper by Mr. de Winton on a collection from Shendy [3], to the north of Khartoum, to the same author's work [4] in conjunction with the late Dr. J. Anderson on the Mammals of Egypt generally, and to a small paper [5] of my own on Mr. Hawker's collection from the Fashoda region of the Nile.

1. Rousettus stramineus Geoff.

4. ♂. Khartoum. 15 August, 1902.

2. Hipposiderus caffer Sund.

65. ♂. El Obeid, Kordofan. 22 October, 1902.

H. caffer had already been recorded from this region by Temminck [6].

3. Megaderma frons Geoff.

9. Wad Medina, Blue Nile. 21 September, 1902.

4. Taphozous perforatus Geoff.

1, 2, 3. ♂ ♀ ♀. Khartoum. 28 June, 1902.

5. Canis anthus soudanicus, subsp. n.

60. ♀. El Obeid. 2 October, 1902. (B.M. No. 3.2.8.8.) *Type.*

119. Habessa Wells, W. Kordofan. 7 December, 1902.

The eastern representative of the Senegal *C. anthus* F. Cuv. Closely allied to the typical form, but paler and with markedly smaller teeth.

General characters as in true *C. anthus*. Colour rather paler, a clear sandy buff. Hairs of back and of tail broadly tipped with black. Skull, as may be gathered from the measurements below, smaller and more delicate.

Dimensions of the type :—

Head and body 650 mm.; tail 230; hind foot (s. u.) 137; ear 80.

Skull: basal length 136; zygomatic breadth 78; length of

[1] "Om Professor J. Hedenborgs insamlingar af Däggdjur i Nordöstra Africa," K. Vet.-Ak. Handl. 1842, p. 189.
[2] Reise N.O.-Afrika, ii., 1877.
[3] Nov. Zool. viii. p. 397 (1901).
[4] Anderson & de Winton, 'Mamm. Egypt,' 1902.
[5] Ann. Mag. N. H. (7) viii. p. 273 (1901).
[6] *Fide* Anderson, 'Mamm. Egypt,' p. 102.

nasals (diagonally) 49; interorbital breadth 26; breadth across postorbital processes 37; breadth of brain-case 49·5; palate, length 72·5; breadth between outer corners of p.^{4} 44.

Teeth: length of p.^{3} 9·6, of p.^{4} (on outer edge) 14·2, of m.^{1} 11, of m.^{1} and m.^{2} combined 16·8; breadth of m.^{1} 14, of m.^{2} 10. (Below), length p.$_3$ 8·7, of p.$_4$ 10, of m.$_1$ 17·3, m.$_2$ 8·1.

Hab. and *type* as given above.

This is the Jackal figured by Cretzschmar [1] from Rüppell's specimen as *C. anthus*, but is clearly at least subspecifically different from that animal. Mr. de Winton has recently shown [2] that none of the earlier names of Hemprich and Ehrenberg or other authors apply to this form, and I therefore venture to bestow one on it.

6. Vulpes vulpes ægyptiaca Sonn.

40. ♀. Khartoum. 4 September, 1902.

7. Vulpes pallida Cretzschm.

8. ♂ (young). Wad Medina, Blue Nile. 18 September, 1902.

8. Ictonyx frenata Sund.

118. ♂. Gebel Haraza, W. Kordofan. 6 December, 1902.

The rediscovery of this species is of interest, as there has always been some doubt whether it was or was not the same as the more northern *I. lybica*. It proves to be readily distinguishable by its smaller size, by certain differences in its body pattern, and, especially, by the absence of the black ends to the caudal hairs.

9. Dipodillus stigmonyx Heugl.

5. ♀. Khartoum. 19 August, 1902.

A topotype of the species. As already noted [3], the specimen in the Stuttgart Museum marked *Meriones stigmonyx* does not agree with Heuglin's description of this animal, and is more like that of his *M. dongolanus*.

It is to be observed that the present Gerbille and the next one are so extremely alike, that it is almost impossible to distinguish them apart except by an examination of the soles and skulls. There is, however, a darker median area ("Scheitel und Rückenmitte satter gefärbt") in the *Dipodillus* not present in the *Gerbillus*, and this confirms my previous allocation of the name, which in any case having once been made should be adhered to.

10. Gerbillus agag, sp. n.

96. ♂. Agageh Wells, W. Kordofan. 17 November, 1902. (B.M. No. 3.2.8.11.) *Type.*

A small species of true hairy-footed *Gerbillus*, with comparatively short tail.

[1] Atl. Rüpp. Reise Mamm. pl. 17 (1826).
[2] Anderson & de Winton, Mamm. Egypt, p. 213 (1902).
[3] Ann. Mag. N. H. (7) viii. p. 276 (1901).

Size small, and feet short. General colour above soft sandy buff, slightly lined on the back with the dark tips to the hairs, but without any marked darker dorsal area. Along the back the bases of the hairs are plumbeous, but laterally, still within the sandy area, the hairs are broadly ringed with white subterminally, though this colour does not show on the surface. Under surface pure sharply defined white as usual. Cheeks, a prominent patch above and behind each eye, and another behind the ear white. Whole of fore limb white, hind limb with a sandy line down its outer side, the inner side and whole of feet snowy white; palms and soles thickly hairy. Tail short for this group, pale sandy above, darkening towards the pencilled end; white below.

Skull unfortunately broken in the single specimen. Molars markedly smaller and lighter than in the common Soudanese *G. pygargus*.

Dimensions of the type:—

Head and body 87 mm.; tail 100; hind foot (s. u.) 24; ear 11. Length of upper molar series 3·7.

Hab. and *type* as given above.

This little Gerbille is distinguished from its neighbour *G. pygargus* by its smaller size and shorter tail. Its close resemblance to *Dipodillus stigmonyx* has already been noted.

11. Arvicanthis dunni, sp. n.

103. ♂. Kaga Hills, W. Kordofan (about 120 miles W. of El Obeid). 20 November, 1902.

"Dug out of reddish sandy cultivation soil, from among the natives' crops of dukhan."—*H. N. D.*

A many-striped species of the *A. barbarus* group; allied to *A. zebra*, but smaller, paler, and with the light and dark stripes less contrasted.

Size small, the smallest of the group. General pale ground-colour buff, the lateral darker stripes brown instead of black. Head coarsely grizzled buffy and brown. Central dorsal stripe beginning on the crown, very narrow, blackish, but not so deep a black as in *A. zebra*; outside this there are on each side five uninterrupted buffy stripes, separated from each other by broad brown bands, each of which is divided down the centre into two by an interrupted band of light, an arrangement essentially as in the other species. The light spaces are throughout clear buff, and the dark lines brown, a clear buffy line passing along below the outermost dark line and edging the pure white of the belly. In *A. zebra* the outer lines at least are white, only those near the spine being buffy. Eye-ring buffy. Ears dull ochraceous, without darker marking. Arms and legs pale buffy, becoming white on the fingers and toes. Tail well-haired; dull ochraceous above, with a narrow and inconspicuous mesial line of black; whitish below.

Skull conspicuously smaller than in *A. zebra* and the other species of the group, with rather larger bullæ; incisors narrower, but molars rather larger in proportion.

Dimensions of the type :—

Head and body 90 mm.; tail 70; hind foot (s. u.) 23; ear 14.

Skull—greatest length 28; basilar length 22; zygomatic breadth 13; nasals 10 × 3·4; interorbital breadth 4·4; breadth of brain-case 12; palate, length 12·2; diastema 6·7; palatal foramina 5·6; length of upper molar series 4·9.

Type. Old male. B.M. No. 3.2.8.15. One specimen only.

A Fashoda striped rat presented by Mr. R. M. Hawker in 1901 being identified as *Arvicanthis zebra*, the present species may be readily distinguished from it by its much smaller size and more buffy coloration.

Capt. Dunn tells me that this rat was very common in the cultivated fields of the natives, burrowing in their crops of dukhan. It is a very handsome and distinct species, and I have much pleasure in connecting his name with it.

12. Acomys witherbyi de Wint.

73. ♂. Katul Hills. 30 October.

13. Leggada tenella, sp. n.

7. Old ♀. Roseres, Blue Nile. 14 September, 1902. (B. M. No. 3.2.8.13.) *Type*.

"Found in burrows in cornfield; had 7 young in the womb."—*H. N. D.*

A very small species of the *L. minutoides* group.

General colour of cheeks and sides a clear sandy or ochraceous buff, with a distinct darker median dorsal area, commencing as a narrow well-defined line on the nose, broadening on the crown, and extending, though less sharply defined, all down the back, and dying away on the rump. Under surface pure sharply defined white. No lighter markings round eyes. Ears small, evenly rounded, grey, their edges faintly whiter; a large and prominent white patch behind and below their posterior bases. Fore limbs wholly white; hind limbs with a narrow line of the body-colour continued down on the hinder side to the heel, otherwise white. Tail about as long as the body without the head, brown above, inconspicuously lighter below.

Skull smaller and narrower than in the Cape *L. minutoides*, with square and well-defined supraorbital edges. Palatal foramina ending level with the anterior fourth of m.[1]. Posterior palate elongated, its hinder edge about equidistant from the last molars and the front of the bullæ.

Dimensions of the type :—

Head and body 50 mm.; tail 35; hind foot 11·5; ear 9.

Skull: greatest length 17·2; basilar length 14; zygomatic breadth 9; nasals, length 6·3; interorbital breadth 3; brain-case, breadth 7·5; palate, length 9·3; palatal foramina 4·0; diastema 5·0; length of upper molar series 3·0.

Hab. and *type* as given above.

This beautiful little species is readily characterised by its strong sandy colour, the marked dorsal darkening, and elongated palate.

14. Jaculus gordoni, sp. n.

85. ♀. Gebel Agageh, W. Kordofan. 12 November, 1902.

104. 105. ♂ ♂. Kaga Hills, W. Kordofan. 20 November, 1902.

106. ♂. Gebel um Durragh, W. Kordofan. 25 November, 1902.

Allied to *J. jaculus* Linn., but larger and differently coloured, and with longer ears.

Size rather greater and build stouter than in *J. jaculus*. General colour above, as compared to the yellowish "buff" of *J. jaculus*, darker, and nearly approaching to "vinaceous buff" of Ridgway. Laterally, the dark colour seems to pass rather sooner into the pure white of the under surface. White markings more extended than in *J. jaculus*, the cheek, supraorbital, and postauricular white patches all large. White hip-stripe large, weakened in colour by a faint buffy or brownish sprinkling. Fore limbs wholly white. Hinder aspect of thighs like back. Fine hairs of feet silvery white, the terminal half of the long digital hairs sandy. Tail of the usual pattern, its basal portion isabelline buffy above; black subterminal band rather over an inch in length; white tip $\frac{1}{2}$–$\frac{3}{4}$ in.; longest hairs at end of tail 16–17 mm. in length.

Skull shaped quite as in *J. jaculus*, but larger and heavier throughout.

Dimensions of the type, measured in the flesh:—

Head and body 120 mm.; tail 200; hind foot (s.u.) 63; ear 25.

Skull: greatest length in middle line 34; basilar length 27·5; zygomatic breadth 24; tympanic breadth 24·7; length of nasals on outer edge 12·5; interorbital breadth 12·8; interparietal 5·7 × 8·7; palate, length 17·3; palatal foramina 4·7; diastema 9·6; length of upper molar series 5·1.

Hab. (of type). Kaga Hills, W. Kordofan. Also occurring at Omdurman.

Type. Old male. B.M. No. 3.2.8.16. Original number 104.

This Jerboa, which I have named in memory of the famous General Gordon, differs decidedly from the ordinary Egyptian *J. jaculus* by its larger size and different colour. The Museum had previously received a specimen of it from Omdurman, collected by Mr. W. L. S. Loat, but as that was young and without skull, it could not be described.

The only other species which need be referred to is *Dipus microtis* Reichenow[1] from "Samar, in Nord-ostafrica." That was founded on a young specimen, but the description of its teeth shows that it was sufficiently adult not to be the young of the present form, than which it is very much smaller ("Lauflänge

[1] Zool. Anz. x. p. 369 (1887).

35 mm."), with shorter ears, and with the remarkable character (if not due to accident) of having no white at the end of its tail.

15. Lepus æthiopicus H. & E.

6. ♂. Shendy. 1 September, 1902.
92.93.94.97. ♂ ♂ ♀ ♀. Agageh, Kordofan. November 1902.
39. ♂. Wad Medina, Blue Nile.

16. Procavia ruficeps H. & E.

77. ♂. Kaga Hills, Kordofan. 2 November, 1902.
78.79.80.83.88. Agageh Hills. November.

17. Oryx algazel dammah Cretzschm.

♂. Kordofan.

Practically a topotype of the subspecies.

When the 'Book of Antelopes' was published, owing to the predilection of the senior author for "well-established" names, the term *leucoryx* was used for the species to which Lichtenstein erroneously transferred that name, while the true *leucoryx* of the Persian Gulf was called by Gray's name *beatrix*. To put matters more in accordance with modern ideas on nomenclature, the Scimitar Oryx should bear the name *algazel* Oken; but as that name was founded on Cuvier's figure of a Senegal specimen, and it is practically certain that the Eastern Soudanese form is at least subspecifically distinct from the Western, a second name is required, and this we find in the "*Antilope dammah*" of Rüppell and Cretzschmar. *A. dammah* was erroneously identified by Rüppell, and following him by Sclater and myself, with the Beisa, but by its locality ("die grossen Steppen von Haraza") is clearly shown to be the Scimitar Oryx. This is fortunate, as the name *dammah*, being earlier than *beisa*, would have had to be used in the latter's place had Rüppell's identification been correct, but now the Beisa is left with its familiar name unaltered.

Briefly put, the nomenclature is as follows:—

Scimitar Oryx.

Oryx algazel Oken.
O. leucoryx of authors generally, not of Pallas.

Western form:—
Cemas algazel Oken, Lehrb. Nat. iii. pt. ii. p. 741 (1816); ex L'Algazelle, F. Cuv. H. N. Mamm. i. pl. 376 (1819). (Senegal.)

Eastern form:—
Antilope dammah Cretzschm. Atl. Rüpp. Reise, Mamm. p. 22 (footnote), 1826. (Haraza, Kordofan.)

White Oryx.

Oryx leucoryx Pall.
Antilope leucoryx Pall. Spic. Zool. xii. p. 17 (1777).
Oryx beatrix Gray, P. Z. S. 1857, p. 157, and of authors generally.